

# EXHIBIT G

Wade, Brendon S.

Volume 1 - 02/20/2020

Summary Proceeding with Highlighted Clips

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CONFIDENTIAL

Defense Objections  
(Runtime - 00h:14m:16s)

Plaintiffs Designation  
(Runtime - 00h:20m:38s)

Plaintiffs Objections  
(Runtime - 00h:04m:46s)

Defense Counters  
(Runtime - 00h:25m:29s)

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05: THE VIDEOGRAPHER: This will be the video  
06: deposition of Brendon Wade, being taken in the  
07: matter of In Re: Pacific Fertility Center  
08: Litigation.

09: Today's date is February 20th, 2020. The

*Plaintiffs Objections 402/403 - relevance, waste of time:*

10: time on the record is 9:34 a.m. My name is  
11: Brandon Brantley. I'm the videographer. The  
12: court reporter is Julie Friedman.  
13: Counsel, please introduce yourselves for  
14: the record, after which the court reporter will  
15: swear in the witness.

**Page 00008**

15: Just so that we have it on the record,  
16: although we -- we just met each other off the  
17: record --

18: A. Uh-huh.

19: Q. -- can you go ahead and state your full  
20: name.

21: A. Sure. My full name is Brendon Sanders  
22: Brell Wade.

*Plaintiffs Objections 402/403 - relevance, waste of time:*

23: Q. Wonderful. And have you been deposed  
24: before?

25: A. No.

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06: Can please you tell me the highest degree  
07: that you've received.

08: A. A Bachelor's of Engineering in Biomedical  
09: and Chemical Engineering.

10: Q. And where was that from?

11: A. Vanderbilt University.

12: Q. Okay. And what year was that?

13: A. Graduated in 2014.

*Plaintiffs Objections 402/403 - relevance, waste of time:*

14: Q. Okay. And have you received any

15: certifications or other certificates since you --

16: that -- your graduation in 2014?

17: A. Yes.

18: Q. Okay. What? Which certifications?

19: A. So there was Lean Six Sigma Green Belt

20: Certification, which is a kind of a generic quality

21: system certification.

22: Q. Okay.

23: A. And then another was one Certified Durable

24: Medical Equipment Specialist, which more relates to

25: our respiratory products --

**(continued page 00016)**

01: Q. Okay.

02: A. -- at Caire.

03: Q. And anything else? Are there any other

04: trainings or certification courses that you've

05: completed?

06: A. Not that I can recall official. Right.

07: Just informal trainings internally on different

08: products.

09: Q. Okay. Can you go through your jobs from

10: your graduation in 2014 to the present.

11: A. Certainly. So when I graduated in 2014,

12: the field service engineer position that I started at

13: Chart Industries was my first job out of school.

14: And then that position and then my current  
15: position as technical service manager are the -- the  
16: only two full-time positions that I've held.

*Plaintiffs Objections 402/403 - relevance, waste of time:*

17: Q. Okay. And you are currently a technical  
18: service manager at Chart or at Caire?  
19: A. Caire, I think.  
20: Q. At Caire.  
21: A. Uh-huh.  
22: Q. Were you a technical service manager at  
23: Chart before -- before coming to Caire?  
24: A. Correct. It is the same title.  
25: Q. Okay. So you were a field service

**(continued page 00017)**

01: engineer from the time of your graduation in 2014 --  
02: A. Uh-huh.  
03: Q. -- until when?  
04: A. It was approximately September 2016, I  
05: believe.  
06: Q. Okay.  
07: A. Could be a little bit off from that, but  
08: that's been -- That's when I became the manager.  
09: Q. Okay. And what were your -- What was  
10: your role? What were your general responsibilities  
11: in that -- in that role?  
12: A. In the -- the manager role or the field  
13: service engineer?  
14: Q. Field service engineer.  
15: A. Ah, okay. So the main responsibilities  
16: are fielding any sort of technical inquiry from  
17: the -- from our customers in the field; and that can  
18: be what we call end users or end customers, you know,

19: the people really working with the equipment day to  
20: day, or a distribution network; and we have  
21: distributors on -- for the respiratory products, as  
22: well as the cryobio products.

*Plaintiffs Objections 402/403 - relevance, waste of time:*

23: Q. Okay. And were those -- So respiratory  
24: and cryobio, were -- were those the two divisions  
25: that you answered service calls for?

**(continued page 00018)**

01: A. Correct. There's some other delineations  
02: within there, but those are the two broad categories.  
03: Q. Okay. Let's focus on cryobio.  
04: A. Uh-huh.  
05: Q. Can you describe for me what falls under  
06: that umbrella?  
07: A. That would --

**Page 00018**

*Plaintiffs Objections 402/403 - relevance, waste of time:*

10: THE WITNESS: Oh, so what falls under the  
11: umbrella of --  
12: Q. (By Ms. Cowan) When -- When you're  
13: answering service calls for cryobio --  
14: A. Uh-huh.  
15: Q. -- what -- what sorts of products does  
16: that involve?  
17: A. So any of the aluminum or steel products  
18: manufactured by Chart Industries for cryopreservation  
19: purposes.  
20: Q. Okay.  
21: A. And there's actually other applications  
22: that aren't necessarily for cryopreservation. Some  
23: people use them for aircraft parts and all sorts of

24: industrial uses as well.

25: Q. Okay. And does that also include any

(continued page 00019)

01: peripheral -- So it also includes controllers, I'm

02: assuming, the service calls that you would answer?

03: A. Yes. The controller being a -- optional

04: in some cases, but a common accessory part or part

05: you would attach to the freezer.

06: Q. Okay. Great. And so you answered -- You

07: said that you answered customer queries and end-user

08: queries. Did -- Were you also involved in writing

09: manuals or training materials when you were a field

10: service engineer?

11: A. Yes, to some extent. So we would be

12: assigned different products. Again, so it may --

13: You know, one quarter might be mainly respiratory,

14: and then the next quarter might be cryobio.

15: But yeah. For all of our products, we

16: create technical manuals and technical documentation.

17: Q. Okay. And did you create any technical

18: manuals or documentation relating to the TEC3000?

19: A. So the main technical manual for the

20: TEC3000 has existed for many years since before I got

21: there. If I recall, I may have drafted or helped

22: revise at least one or two revisions. I -- There's

23: several steps in the process. I can't remember

24: exactly which ones I would have launched versus just

25: provided input.

(continued page 00020)

01: Q. Do you remember the subject matter of

02: those revisions?

03: A. Generally, minor changes. I can't recall

04: any specifically.

05: Q. Okay. And then your next position was

06: technical service manager?

07: A. Correct.

08: Q. Roughly September of '16?

09: A. Correct.

*Plaintiffs Objections 402/403 - relevance, waste of time:*

10: Q. And you were at Chart until when?

11: A. So this would have been, I guess whenever

12: the divestiture of Caire, Inc. from Chart Industries

13: to NGK would have occurred, so personally for me, it

14: was relatively seamless.

15: Q. Okay.

16: A. But I think that changeover happened

17: December of 2018 --

18: Q. Okay.

19: A. -- or roughly around December, January, in

20: that timeframe.

21: Q. And what were your -- What was your role

22: and what were your responsibilities when you were

23: in -- in your technical service manager position?

24: A. The current one at Caire, or under Chart?

25: Q. Under Chart.

(continued page 00021)

01: A. Oh, under Chart. So now it's managing

02: the -- the other field service engineers in Georgia,

03: and basically, just supporting their mission of



04: answering customer inquiries, arranging trainings,

05: that sort of thing.

06: Q. Okay. So if I'm understanding then,

07: originally, you were sort of at the troubleshooting

08: level; and now you are managing people that had

09: your -- your prior position; is that correct?

10: A. Correct.

*Plaintiffs Objections 402/403 - relevance, waste of time:*

11: Q. Okay. When you were working as a field

12: service engineer, did you report to anyone?

13: A. Yes.

14: Q. Who did you report to?

15: A. So as field service engineer, it was --

16: Lanier Hogan was my supervisor.

17: Q. Okay. And anyone else?

18: A. No. Just Lanier.

19: Q. Okay. And did anyone report to you in

20: that position?

21: A. No. Not -- Not officially.

22: Q. Okay. And in your current role --

23: Well, when you were a technical service

24: manager at Chart, who reported to you?

25: A. So the -- the core group of field service

**(continued page 00022)**

01: engineers there, which typically numbered four to

02: five. Of course, as -- as people rotated to

03: different departments or left the company, that

04: varied, but that core group of people; and the

05: individuals changed over time.

06: Q. Can you give me the names that you worked

07: with the most.

08: A. It depends on the timeframe. We had a few

09: people.

10: So Shane Dockery is still with the group

11: with Caire. Matt Barth, Justin Junnier, Joy

12: Sandmann, Zongyan Zhang.

13: Q. Okay. And anyone else aside from

14: people --

15: A. The current -- The current group there is

16: Leigh Hudgins, Jessica Mullins, John Shephard, and

17: Amber Atkins.

18: Q. Okay. And who did you report to as

19: technical service manager while you were at Chart?

20: A. So initially, that was Deborah Childers,

21: director of customer and technical service.

22: Q. Okay. And then?

23: A. So she took a different position at Chart;

24: and I believe immediately after her, I reported to

25: Dan Van Hise.

**(continued page 00023)**

01: Q. Okay. And when was that changeover?

02: A. I honestly can't recall. I don't

03: remember.

04: Q. Okay. And anyone else? Was there anybody

05: else in that position while you were at Chart?

06: A. At Chart, so after -- After I reported to

07: Dan Van Hise, he left the company as well; and I

08: reported to Miguel Cervantes, who's my current

09: supervisor.

10: Q. Okay.

11: A. I don't recall if that was before the  
12: Chart transition or after the Caire transition. I  
13: don't remember.

14: Q. Okay. So as we -- as you had mentioned  
15: before, is it --

16: Let me just confirm that as part of your  
17: work, did you work with broken or malfunctioning  
18: TEC3000 controllers?

19: MR. SMITH: Assumes facts. Vague.

20: Q. (By Ms. Cowan) You can answer.

21: A. So did I work with broken or  
22: malfunctioning controllers. Certainly, a lot of  
23: allegedly broken controllers. That was our -- The  
24: main job with really any customer complaint is verify  
25: what's actually faulty or defective and what's user

**(continued page 00024)**

01: error or something -- something not a manufacturing  
02: defect.

03: Q. Okay. So when someone had a complaint or  
04: a concern about a TEC3000 per se --

05: A. Uh-huh.

06: Q. -- would you go on a site visit to try and  
07: analyze that problem, or would it normally -- or  
08: would they send the piece of equipment to you?

09: How does -- How does that work? What's  
10: the workflow?

11: MR. SMITH: Overbroad.

12: Go ahead, you can answer.

13: THE WITNESS: Okay. So that -- Not very

14: common that we, ourselves, as Chart would go out  
15: on -- in the field to look at those.  
16: And the business model for Chart, and  
17: especially in the cryobio realm, is to rely on  
18: that -- those distributors in the field to do a  
19: lot of that initial fieldwork; and then when  
20: they're stuck on a problem, they'll contact us.

21: Q. (By Ms. Cowan) Okay. Great.  
22: And -- So I'm just trying to skip  
23: through.  
24: And so if a TEC3000 was sent to Chart or  
25: was returned, did -- were you part of evaluating that

**(continued page 00025)**

01: process or part of evaluating that unit?  
02: MR. SMITH: Incomplete hypothetical.  
03: Vague.  
04: THE WITNESS: In per -- In certain cases,  
05: especially if it was a case that I had taken  
06: from the customer, I would generally try and  
07: follow up on those if it was something that we  
08: wanted to notify engineering or it was -- needed  
09: to send it back to the supplier.  
10: Q. (By Ms. Cowan) Okay. And that supplier  
11: is?  
12: A. Extron, who manufactures the TEC3000.

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08: Can you tell me what an event log download  
09: is.  
10: A. Yes. So it's a -- There's a hardware

11: system where we can connect into the TEC3000  
12: controller with a serial cable, connect it to a PC,  
13: and take an Excel file download of -- It's called an  
14: event record.

15:               So an event is just a time point that  
16: shows the current temperatures and levels at  
17: different times and gives you a sort of history of  
18: the controller.

19:       Q.     Okay. And what was your purpose in taking  
20: an event log download for the returned controllers  
21: that you were evaluating?

22:       A.     The event log downloads are, with the --  
23: the TEC3000 controllers, one of the better  
24: troubleshooting tools to get an idea of the history  
25: of the controller, how it's been operating over a

**(continued page 00035)**

01: long period of time.

02:       Q.     How would you use that as a tool to  
03: evaluate these controllers?

04:               MR. SMITH: Assumes facts.

05:               THE WITNESS: So the -- the main way we  
06: would evaluate the event logs is looking for  
07: alarm codes, so high usage, fill time alarms,  
08: things like that.

09:       Q.     (By Ms. Cowan) What would it tell you if  
10: you saw those alarm codes about the functioning of  
11: the controller?

12:       A.     So typically, the -- To my recollection,  
13: one of the more common questions or troubleshooting

14: calls we would get was people complaining of long  
15: fill times; and to my recollection, mainly, those  
16: were improperly-sized source tanks or  
17: improperly-sized piping and hosing to the freezer,  
18: making the -- the setting -- or the fills take longer  
19: than they -- they might otherwise need to.  
20:               So basically, it's suboptimal settings  
21: that still the freezer's operating just fine; but  
22: it's causing basically nuisance alarms.

23:       Q.     Okay. And is there any -- any other  
24: information that you would be looking at those event  
25: log downloads for?

**(continued page 00036)**

01:       A.     Just anything unusual, if temperatures are  
02: fluctuating, levels are fluctuating.  
03:       Q.     Okay. And what does it tell you if  
04: temperatures or levels are fluctuating?

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***Defense Counters Congtingent on whether testimony on Trial Exhibit 216 is admitted:***

10:       A.     So if -- if temperatures or levels are  
11: fluctuating, it could mean someone was taking the  
12: temperature probe out of the tank to do a manual  
13: calibration or test or verification or doing work on  
14: the plumbing.

***Defense Objections See Objection to Trial Exhibit 216 (Doc. 783-1); inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:***

15:       MS. COWAN: Okay. I'm going to go ahead  
16:       and mark as Exhibit 257 another document. This  
17:       is Bates-stamped CHART 17011.  
18:       (Exhibit 257 was marked for  
19:       identification.)

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*Defense Objections See Objection to Trial Exhibit 216 (Doc. 783-1); inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

03: Q. (By Ms. Cowan) Okay. Was this e-mail

04: thread sent and received as part of your duties for

05: Chart?

06: A. Yeah. It appears so. Yeah.

07: Q. Okay. Any reason to believe this is not a

08: true and correct copy of this e-mail thread?

09: A. Yeah. Nothing makes me think this is not

10: true and correct.

11: Q. Okay. Let's start with the first e-mail

12: in the thread, which is, again, at the end of the

13: document. This is an e-mail from Ramon Gonzalez, to

14: you and Gregory Mueller.

*Defense Counters Congtingent on whether testimony on Trial Exhibit 216 is admitted:*

15: Do you know who Gregory Mueller is?

16: A. Yes. He was one of our contacts at

17: Extron.

18: Q. Okay. And did -- Was he your contact

19: specifically with regard to the TEC3000 controllers?

20: A. Yes. That was the -- I don't know if we

21: purchased other products from them. That was the

22: primary part we purchased from Extron.

*Defense Objections See Objection to Trial Exhibit 216 (Doc. 783-1); inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

23: Q. Okay. Mr. Gonzalez writes here, We have

24: had several e-mails back and forth on the issue of

25: the sudden level drop of -- to zero and serial number

(continued page 00038)

01: disappearance. Attached are e-mails related to this

02: issue. I'm not sure what's happening here, but we're

03: receiving additional cases globalwide relating to

04: this issue, so it's not only overseas, but also

05: occurring in the USA.

06: Are you familiar with this -- this issue

07: of a sudden level drop to zero and serial number

08: disappearance in connection with the TEC3000

09: controllers?

10: A. Yes.

11: Q. Okay. Can you describe what that issue

12: was to me.

13: A. So essentially, how Ramon describes it

14: here, so sudden in that it's intermittent and hard

15: to -- or not always predictable, and the level drops

16: to zero. Serial number disappears from the screen;

17: and typically, the temperatures will read below minus

18: 200 Celsius, which is indicating a -- a false reading

19: that --

20: My experience, too, is in the field this

21: is generally resolved with powering the controller

22: off and the powering back on again; and the

23: controller will resume normal functionality.

*Defense Counters Congtingent on whether testimony on Trial Exhibit 216 is admitted:*

24: Q. Okay. Were there -- So you -- you listed

25: a -- a couple of different symptoms of this problem.

**(continued page 00039)**

01: Were there any other symptoms that you recall?

02: A. So I think as part of the symptoms, it --

03: I think there were some -- We'd have to go back and

04: look at the -- the case data, but it didn't always

05: seem consistent, but sometimes the event log record

06: would be corrupted or portions of it would be

07: missing.

08: Q. Okay. And were all of those symptoms

09: present each time?

10: Was it, you know, reliable in that you're



11: going to see all of these different symptoms with

12: each controller; or were they sort of a mix of

13: symptoms?

14: A. It did seem to be a mix. Again, I'd have

15: to look at my old notes to see if they were

16: consistent across-the-board; but there was certainly

17: allegedly faulty controllers returned that did have

18: the serial numbers still on them.

19: Q. Okay. And you mentioned that the event

20: log would get corrupted or have pieces -- pieces

21: missing; is that correct?

22: A. It would appear so.

23: Q. Okay.

24: A. Yeah.

25: Q. And so how would you determine if that was

**(continued page 00040)**

01: the case?

02: A. So the typical -- The way we would

03: distinguish that, the most obvious sign we would

04: notice is at some point in the log, it would be

05: reading normally; and then prior to that time, the

06: date code would read 255, 255/1999, or some -- some,

07: you know, non -- nonrealistic date; and then the

08: levels and temperatures would read unrealistic values

09: as well.

***Defense Counters Congtingent on whether testimony on Trial Exhibit 216 is admitted:***

10: Q. Okay. And how -- how could you tell that

11: the temperatures or level --

12: Well, let's stick to one thing. How could

13: you tell that the temperatures were unrealistic?

14: A. I -- I don't recall exactly. The -- The

15: main thing we would see is the -- the date code being  
16: off, so we would see the dates; and say, okay,  
17: obviously, those dates are wrong. If I remember  
18: correctly -- and I could be wrong -- I believe it  
19: reads zero, or yeah. It'd be either minus 200 like.  
20: Q. Okay.  
21: A. Yeah.  
22: Q. So you're saying there are temperatures  
23: that just aren't possible?  
24: A. Yeah. Temperatures, yeah, that  
25: wouldn't -- wouldn't logically make sense with what

**(continued page 00041)**

01: the freezer would be experiencing.

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*Defense Counters Congtingent on whether testimony on Trial Exhibit 216 is admitted:*

14: Q. I think one of the other things that you  
15: had mentioned earlier was that sometimes things would  
16: be missing from the event log.  
17: How could you tell that there was time  
18: missing from the event log?  
19: MR. SMITH: Misstates testimony.  
20: THE WITNESS: So that's -- That is harder  
21: to verify; and again, we're going based off of  
22: what the customer is telling us and when they  
23: claim that they installed the freezer.  
24: But there would be cases where they would  
25: state, oh, we installed this freezer in whatever

**(continued page 00043)**

01: year, whatever date; and we only see data going  
02: back to, you know, a much earlier or much later  
03: timeframe.

04: So the customer claims, oh, this freezer's  
05: been in operation for X amount of time; and we  
06: don't see data for that range.

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*Defense Objections Attorney colloquy; mistates prior testimony; inadmissible other occurrence evidence; MIL No. 1; not substantiall similar; FRE 403/611(a)(1):*

17: Q. (By Ms. Cowan) Okay. Do you recall  
18: attributing the serial number equals zero issue --  
19: And I'm going to sort of refer to all  
20: those symptoms that we just discussed as the serial  
21: number equals zero issue.  
22: Do you remember attributing any aspect of  
23: that to user error?  
24: A. Not that I recall.

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*Defense Counters Congtingent on whether testimony on Trial Exhibit 216 is admitted:*

07: Q. (By Ms. Cowan) Sure. Let me know when  
08: you're ready.  
09: A. Okay. Sorry. Yeah. I'm ready.  
10: Q. No problem.  
11: A. Uh-huh.  
12: Q. So in your e-mail here at the top of the  
13: page, it looks to me as though you're just describing  
14: or discussing a group of controllers that you had  
15: been evaluating; is that correct?  
16: A. Yes. Uh-huh.  
17: Q. All right. And these are controllers that  
18: are not functioning properly or as expected?  
19: A. Let's see. So there -- There's a mix of  
20: issues. Right. There's -- See, that's one of the  
21: earlier e-mails. There's some -- The serial  
22: number's zero. The thing that you had mentioned,

23: Temp A, yeah, Temp B reading open, which is a -- a  
24: port issue, so there's -- there's a mix of several  
25: different behaviors.

**(continued page 00045)**

01: Q. Okay. Ah. So you're -- you're referring  
02: to this e-mail that you sent at 11:05 a.m.?  
03: A. Yes. On November 15th. Yeah. There's a  
04: list of serial numbers that I gave to Greg with the  
05: symptoms that we noticed on each.  
06: Q. Okay. And so would you differentiate  
07: between the ones that have serial number equals zero,  
08: and that's the only thing, and these ones with the  
09: incorrect temperature readings?  
10: A. Temps reading. Yes. They -- They seem  
11: to have different -- different symptoms.  
12: Q. Okay. Going back to that first e-mail,  
13: you say, "For" -- And this is sort of midway in that  
14: paragraph. For 277395, when first powered on the  
15: temp B read negative 198.7 C regardless of whether  
16: the probe was in LN2 or not. The temp B calibration  
17: completed. (LN2 temp set to negative 195.8 C); and  
18: then after, temp B read negative 195.8 C regardless  
19: of the actual temp. Connected to a -- Connected a  
20: totally different probe, and it read the same. Temp  
21: A read negative 195.8 C from the start.  
22: It seemed like most of these read the low  
23: temps immediately. Either they were stuck at one  
24: temp (see above), or they would vary slightly, but  
25: still almost never cross the LN2 saturation temp

**(continued page 00046)**

01: programmed on the controller.

02: Does that refresh your memory that  
03: sometimes you would see returned controllers that  
04: were stuck at one temperature?  
05: A. Yes. Yeah. This -- this -- This looks  
06: familiar and sounds familiar. This was not very  
07: common at all. I -- I don't remember this being a  
08: very -- very common issue.  
09: Q. Okay. And what -- What do you remember  
10: being more common about the temperature readings?

*Plaintiffs Objections 402/403 - relevance, waste of time:*

11: MR. SMITH: Vague.  
12: THE WITNESS: Temperature readings on  
13: return controllers?  
14: Q. (By Ms. Cowan) Yes.  
15: (Discussion ensued off the record.)  
16: THE WITNESS: Generally, temperature --  
17: temperature readings are generally not one of  
18: the things that are reading off when we receive  
19: controllers back.  
20: Q. (By Ms. Cowan) Okay. But as to the ones  
21: you're discussing here --  
22: A. Uh-huh.  
23: Q. -- the temperature readings were off,  
24: correct?  
25: A. Correct. Yeah. For these -- these

**(continued page 00047)**

01: controllers here.  
02: Q. Okay. So for the controllers where the  
03: temperature readings were not correct, what do you  
04: remember as being the more common thing that you  
05: would see, rather than what you said is not so common  
06: of being stuck on one temperature?

07: MR. SMITH: Vague. Assumes facts.

08: THE WITNESS: I guess I should clarify.

09: The temperature readings being off or being

10: stuck at one temperature like these here was not

11: common over all across TEC3000 controllers in

12: general, to my recollection.

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*Defense Objections See Objection to Trial Exhibit 200 (Doc. 783-1); post-remedial FRE 407 (April 2018 discussion of testing controllers); inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

21: Q. (By Ms. Cowan) Okay. And, Mr. Wade,

22: you're looking at Exhibit 259, which starts with

23: CHART 4551.

24: Are you familiar with this e-mail thread?

25: A. I'm looking over it.

**(continued page 00069)**

01: Q. So --

**Page 00069**

*Defense Objections See Objection to Trial Exhibit 200 (Doc. 783-1); post-remedial FRE 407 (April 2018 discussion of testing controllers); inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

09: Q. (By Ms. Cowan) Okay. And you would have

10: sent and received this as part of your duties at

11: Chart?

12: A. Yes.

**Page 00072**

*Defense Objections See Objection to Trial Exhibit 200 (Doc. 783-1); post-remedial FRE 407 (April 2018 discussion of testing controllers); inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

23: Q. Okay. So let's skip up to your e-mail.

24: You say here's some more background. I

25: tested about 37 controllers last year myself, all

**(continued page 00073)**

01: returned for various reasons. 19 were missing the SN

02: on the controller, meaning they had undergone one of  
03: these unintended resets. Many returns never made it  
04: to my desk, as shipping forwarded them immediately to  
05: Extron, so this is only a fraction of total  
06: controller returns.  
07: Starting just there, do you have any  
08: reason to believe that the numbers you put in this  
09: e-mail are incorrect?  
10: A. No. I do not at this time.

**Page 00076**

*Defense Objections See Objection to Trial Exhibit 200 (Doc. 783-1); post-remedial FRE 407 (April 2018 discussion of testing controllers) inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

08: Q. (By Ms. Cowan) Okay. Going back to your  
09: e-mail, you say, "Some customers are becoming wary of  
10: the TEC 3000 since losing the saved event log data is  
11: troubling to them. German Cryo and Woosung in Korea  
12: have particularly sensitive customers."  
13: How did you become aware that some  
14: customers are becoming wary of the TEC3000?  
15: A. I recall either e-mails from our sales  
16: managers or e-mail conversations with these  
17: customers, in particular, alluding to the fact of,  
18: hey, we had a controller fail; or we've had some, you  
19: know, allegedly fail. And, you know, what's the  
20: resolution, what's causing this, that sort of thing.  
21: Q. So you personally spoke to some customers  
22: who were wary of the TEC3000?  
23: A. I can't recall precisely. I'm sure there  
24: were -- again, stuff forwarded on from sales that  
25: said, hey, we're getting this feedback from the field

**(continued page 00077)**

01: in general or this particular customer. You know,

02: can we follow up and do more investigation.

**Page 00080**

*Defense Objections See Objection to Trial Exhibit 200 (Doc. 783-1); post-remedial FRE 407 (April 2018 discussion of testing controllers) inadmissible other occurrence evidence not previously ruled on; not substantially similar; FRE 403/802/803:*

07:                   Going back to your e-mail, you say,

08: "Kyle's group has the testing set up now and should

09: be gathering data from any controllers they come in

10: for return to verify how many have lost the SN."

11:                   Who -- What's Kyle's group?

12:           A.       So that refers to Kyle Eubanks. He was

13: production supervisor for the cryobio line or --

14: Again, it depends on the timeframe that we're

15: speaking of, so he was -- he was -- worked as a

16: operator/builder on the cryobio line; and then at a

17: later date, became the supervisor of it. So I can't

18: remember -- don't remember when exactly that was.

19:           Q.       Okay. And was -- Am I understanding that

20: this -- sort of the testing of returned controllers

21: was taken out of your hands at this -- at the time of

22: this e-mail and transferred to Kyle's group; is that

23: correct?

24:           A.       Yes. So that -- that was the -- the --

25: the process where basically the testing that my group

**(continued page 00081)**

01: was doing, we had -- we're basically taking all the

02: data that we could feasibly take, or we thought we

03: feasibly could take. And it was a -- It'd be fairly

04: routine to see does it operate on a freezer, do the

05: temperatures read normally, and then taking a

06: download.

07:                   So we created an instruction to say, here,

08: here's the step-by-step checks. Here's what we want



09: you to document and collect, save it here, and send

10: that to Extron.

11: Q. Okay. And that -- that -- The

12: responsibility for doing those checks transferred to

13: Kyle's group; is that correct?

14: A. Correct.

#### Page 00087

15: Q. (By Ms. Cowan) Okay. So I'm just going

16: to make sure that I'm understanding. We have this

17: theory that it was electrical or radiofrequency

18: interference. We have this theory of diode

19: suppression.

20: A. Uh-huh.

21: Q. We'll just categorize that.

22: Do you remember any other theories as to

23: what was causing the serial number equals zero issue

24: with the TEC3000 controllers at any point in time

25: when you were at Chart?

#### (continued page 00088)

01: A. Serial number zero. Oh, there was one

02: other that we basically addressed early on; or it was

03: easy to address, 'cause it was user errors.

04: Extron referred to ground loops on some of

05: the contacts, so there's the discrete global

06: contacts. They mentioned something to the effect of

07: if those are wired improperly by the user, that could

08: cause a ground loop and cause memory loss.

#### Page 00091

24: Q. -- TEC3000. Are you aware of any testing

25: that was done at Chart regarding this electromagnetic

**(continued page 00092)**

01: interference, radiofrequency interference with

02: TEC3000s?

03: A. Oh, I do recall. So there was at one

04: point -- So this is when Richard Leboff was onboard.

05: Richard and Ben Carey, another of our engineers, were

06: both in combination tasked with investigating that --

07: that complaint further.

08: Q. Okay. Do you remember the timeframe that

09: they were tasked with investigating that?

10: A. I don't recall offhand.

11: Q. Did you ever hear anything else about that

12: investigation besides the fact that they were tasked

13: with it?

14: A. I believe Ben had sent updates or maybe

15: just one update at some point, but I don't remember

16: ever there being a final conclusion or summary.

17: Q. Did you read -- Did you receive the

18: update?

19: A. I believe I received an e-mail from Ben

20: Carey saying that here's what we've tested so far.

21: Here's what we've found so far. Here's what we

22: confirmed or disconfirmed (sic).

23: Q. Okay. What do you remember about what

24: they've tested when you received that update?

25: A. To my recollection, it was sort of -- sort

**(continued page 00093)**

01: of along the lines of one of the Extron e-mails we

02: saw earlier where Greg Mueller said, you know, we've  
03: confirmed that the serial number's gone; but we don't  
04: know why it's missing. Basically, he said -- he said  
05: we can confirm that it's missing from this section of  
06: the screen or sort of confirming the symptoms  
07: basically is what I recall.

08: Q. Okay. I -- I thought that you said that  
09: what you -- that you remembered that it said here's  
10: what we've tested. Here's what we've confirmed; is  
11: that correct?

12: A. True. So -- So my recollection is Ben  
13: had sent an e-mail to, you know, myself and whoever  
14: else would have been engaged at the time to say, you  
15: know, Richard and I are looking into this. Here's  
16: what we've tested, basically saying we've -- we've  
17: taken a sample of controllers.

18: I don't recall exactly what testing he  
19: did, but it is -- His summary in that e-mail was to  
20: the effect we've confirmed the serial number's  
21: missing. We don't quite know why at this point.

22: Q. Okay. So --

23: A. We've confirmed the serial number is gone,  
24: which is to my mind, right, something we've -- might  
25: have been tested early on; and we're, okay, we --

**(continued page 00094)**

01: We're agreed on that point, that it's missing from  
02: the screen.  
03: Q. Okay. But he didn't have -- You don't  
04: recall there being any conclusions as to what was

05: causing it?

06: A. Yeah. I don't recall any major news on

07: that front.

#### Page 00101

11: Q. When you received the -- So you received

12: the controllers as returns. Have you usually spoken

13: to the end users or the customers before you receive

14: the return to discuss what -- why they're sending it

15: back?

16: A. Someone at Chart would, so with -- with

17: any return, we would just ask them what was -- what's

18: the complaint, what are the symptoms, for our own

19: quality records more than anything else and to verify

20: they're not just sending product back for no reason.

21: So we would gather some detail as to why

22: they're sending it back, and there's a RMA process,

23: return materials authorization, which you may see in

24: some of the e-mails, so they're --

25: To be able to receive it properly and

#### (continued page 00102)

01: track that inventory in our system, we ask that they

02: notify us so that we can create a record, so we're

03: basically expecting that part back; and when it comes

04: into shipping, they know what to do with it.

#### Page 00121

*Defense Objections Chart's objection to Trial Exhibit 223 was overruled by the Court (objection preserved):*

02: MS. COWAN: Okay. I'm going to mark as

03: Exhibit 262, Chart 28403.

**Page 00121**

*Defense Objections Chart's objection to Trial Exhibit 223 was overruled by the Court (objection preserved):*

10: Q. Great. Are you familiar with this e-mail

11: thread?

12: A. Yeah. Now looking at it, it looks

13: familiar. Uh-huh.

14: Q. It this -- Did you send and receive the

15: e-mails in this thread as part of your duties for

16: Chart?

17: A. I would say so.

**Page 00122**

*Defense Objections Chart's objection to Trial Exhibit 223 was overruled by the Court (objection preserved):*

18: Q. Okay. And you respond yep. When they

19: have corrupted, slash, lost event logs, levels

20: dropping to zero and temps reading negative 20 -- 273

21: degrees Celsius or wild numbers.

22: Usually all of these happen together, and

23: the SN changing to zero is the easiest way to tell,

24: as the unit often operates normally after turning off

25: and back on.

**(continued page 00123)**

01: Do you -- That's essentially this SN

02: equals zero issue we've been discussing, correct?

03: A. Yeah. So I'm recapping for him, hey --

04: This is 2017. So I can't recall at this

05: point what we had, you know, relayed to Jim or what

06: complaints he had received, so I'm kind of recapping

07: it for him to, yeah, make clear this, yeah,

08: unintended reset, serial number zero is for this

09: particular complaint.

10: Q. Okay. And then you write, "We try not to

11: call attention to the issue with the customer

12: obviously, but it is good to note it internally for  
13: quality to track."  
14:                 Why do you try not to call attention to  
15: the issue with the customer?  
16:                 MR. SMITH: Vague as to issue.  
17:                 THE WITNESS: The --  
18:                 MS. COWAN: Just using the word.  
19:                 THE WITNESS: The serial number zero issue  
20:                 or --  
21:                 Q.        (By Ms. Cowan) I'm talking about your  
22: language. You say --  
23:                 A.        Uh-huh.  
24:                 Q.        -- "We try not to call attention to the  
25: issue with the customer obviously..."

**(continued page 00124)**

01:                 So I'm -- I'm not going to interpret --  
02:                 A.        Yeah.  
03:                 Q.        -- what the issue is for you. But what --  
04: what did you mean when you wrote this?  
05:                 A.        So yeah. Telling him, yeah, there's  
06: no -- Or at least telling him there doesn't seem to  
07: be a reason to call attention to this. Mainly,  
08: because there seems to be accounts that don't ever  
09: seem to have the problem; and it is intermittent from  
10: everything we can find.  
11:                 There doesn't seem to be anything that --  
12: Or there's some that will have this transient serial  
13: number zero event, and then go on to perform normally  
14: for indefinitely, from what we can tell.  
15:                 Q.        And that's the reason why you try not to  
16: call attention to the issue with the customer?

17: MR. SMITH: Asked and answered.

18: THE WITNESS: Yeah.

19: Q. (By Ms. Cowan) Okay. All right. The

20: last -- I'm going to jump ahead to the last e-mail.

21: Well, actually, let's look at Jim Gibson's

22: next e-mail to you. He says, "I have a customer,

23: German Cryo; and they are complaining about quality

24: issues with the TEC. They have multiple failures and

25: use surge protection. They are checking straight

**(continued page 00125)**

01: away and noticing the serial 0 and demand for a swap

02: controller."

03: Is this what you were talking about before

04: when you said that customers are wary of the TEC3000,

05: is this -- this kind of complaint what you were

06: referencing?

07: A. Yeah. I think this would be the -- the

08: sort of complaint that would lead me to say that,

09: hey, we noticed some customers are noticing the issue

10: and wary of the controllers for that reason.

11: Q. Okay. The last e-mail from you, you say,

12: We've seen the SN equals zero being reported on a

13: regular basis, but I don't recall overfilling

14: becoming a more common issue. Adding Daphne and

15: Jason so they are aware.

16: Engineering is confident that the new MVE

17: TS has much better resilience to electronic

18: interference than the TEC3000. Maybe you can mention

19: this to Joseph/Ramon/Buzz to push forward the launch

20: of European MVE TS and retrofit kits.

21: So let's unpack some of this. Where you

22: say, "... I don't recall overfilling becoming a more  
23: common issue," is that correct, to your recollection  
24: now, that you didn't see overfilling as a common  
25: issue associated with the serial number equals zero

(continued page 00126)

01: issue?  
02: A. Correct. Yeah. The overfilling, to -- to  
03: my mind, has never been conflated with the serial  
04: number zero; and so here in this e-mail thread, I'm  
05: kind of trying to figure out is that a separate issue  
06: entirely, which would be my instinct, but that there  
07: is -- Overfilling sounds like an entirely separate  
08: thing to troubleshoot.

09: Q. Okay. And then in the next part that I  
10: read where you say that engineering is confident that  
11: the new MV -- MVE TS has much better resilience to  
12: electronic interference than the TEC3000, is MVE TS,  
13: is that the touch screen controller that we talked --

14: A. Yes.

15: Q. -- about?

16: A. Uh-huh. Yeah.

17: Q. Okay.

18: A. The touch screen.

19: Q. And so is essentially what you're saying

20: here Chart -- Chart is bringing out a new product

21: that's better at this, and maybe you can mention this

22: to push forward the launch of that? Is that

23: essentially --

24: MR. SMITH: Assumes facts not --

25: Q. (By Ms. Cowan) -- what you're --

(continued page 00127)



01: MR. SMITH: -- in evidence.

02: Q. (By Ms. Cowan) -- what you're summarizing

03: here?

04: A. So I think that's what it's saying there.

05: So yeah. There -- or -- or -- From my

06: understanding from engineering is they believe the

07: MVE TS has better resilience for these sort of

08: interference events. And yeah. You can bring this

09: to the attention of Joseph, Ramon, Buzz for their

10: consideration if they want to move up the launch.

11: Q. The launch of the new product?

12: A. Of MVE TS. Uh-huh.

13: Q. Okay. Do you know when the touch screen

14: was released in the U.S.?

15: A. I don't recall specifically.

16: Q. Okay. Would that have been when you were

17: at Chart?

18: A. Yes. I believe it was during my time at

19: Chart that that was launched.

20: Q. Okay. Do you -- Do you recall any

21: communications with customers suggesting that they

22: swap out existing TEC3000s for the touch screen

23: controller?

24: A. I don't recall specifically.

25: Q. Okay. Do you remember -- Do you recall

**(continued page 00128)**

01: it generally?

02: A. No.

03: Q. Okay. Would you know if that kind of

04: communication had gone out?

05: MR. SMITH: Vague.

06: THE WITNESS: To -- So to recap, so  
07: communication to say, that if I'm understanding  
08: correctly, the MVE TS can be replaced -- can  
09: replace a TEC3000 if you're experiencing the  
10: serial number zero issue.  
11: Q. (By Ms. Cowan) That's not exactly my  
12: question.  
13: A. Okay.  
14: Q. So I'm glad you summarized it.  
15: I think that you had already testified  
16: that there weren't -- that you're not aware of any  
17: communications referencing the serial number zero  
18: issue going out generally to customers or end users?  
19: A. In a mass communication, no.  
20: Q. Okay. And the specific communications  
21: that you recall, those were only in reference to  
22: people who had already reported the problem; is that  
23: correct?  
24: A. Correct. Case by case for customers that  
25: are experiencing it.

**Page 00221**

*Defense Objections FRE 403; confusing; incomplete hypothetical:*

06: Q. Okay. If I -- If I reference a gettering  
07: system, did -- is that familiar to you?  
08: A. Yes. Of a -- and I -- I may be  
09: misinterpreting it. I've heard it called the vacuum  
10: getter system or -- --  
11: Q. Sure.  
12: A. -- or getter system. Yeah.  
13: Q. Okay. And are you aware of any instance  
14: in which there was a -- a problem caused or an issue

15: caused with a tank that was caused by the getter

16: system?

17: A. Not that I'm aware of that I can recall.

18: No.

19: Q. Okay. Have you ever heard of a stainless

20: steel, open-top tank that lost, you know, more than

21: ten inches of liquid nitrogen in the space of less

22: than a day?

23: A. I can't recall exactly; and it would

24: depend on the size, too, or the model, so there's --

25: There's a inches-to-liters conversion we would use in

**(continued page 00222)**

01: tech service.

02: We would get that question. A lot of if I

03: fill -- Or for initial fills, for example, if I fill

04: my tank from zero to five inches or five to

05: eight inches, approximately how many liters am I

06: going to consume for that, which is a -- a good

07: practical question to ask, because they want to know

08: how much supply to have on hand.

09: And that varies widely for the models just

10: based on the size of the necks and the inner diameter

11: of the tanks, so you can have very skinny or very

12: wide tanks, so the inches would correlate to a

13: different liter volume.

14: MS. COWAN: I'm going to strike that as

15: nonresponsive.

16: Q. (By Ms. Cowan) Have you ever heard of a

17: tank that -- that lost a significant amount, like 10

18: to 13 inches or more of liquid nitrogen in the space

19: of a single day?

20: MR. SMITH: Asked and answered.

21: THE WITNESS: I don't recall specifically

22: that -- that number --

23: Q. (By Ms. Cowan) Okay. Do you remember --

24: A. -- or that volume of loss.

25: Q. -- any cases in which there was a

(continued page 00223)

01: significant loss, you know, that approximated that

02: number?

03: I -- I'm not asking you specifically

04: those numbers.

05: A. Uh-huh.

06: Q. But do you recall cases in which, you

07: know, a significant -- perhaps the entire volume of a

08: tank was lost in the space of day?

09: MR. SMITH: Vague. Asked and answered.

10: THE WITNESS: Yeah. I can't -- I can't

11: recall exactly.

12: Q. (By Ms. Cowan) Okay. Have you ever heard

13: of that happening for an 808 tank?

14: A. 808 series freezer, not that I --

15: MR. SMITH: Okay. I'll belated --

16: belatedly object. Same objections.

17: THE WITNESS: Not that I can recall. Not

18: for an 808 model freezer.

*Defense Objections FRE 403; confusing; incomplete hypothetical:*

19: Q. (By Ms. Cowan) Okay. Do you have any

20: sense of the -- of how a tank might lose its entire

21: volume of liquid nitrogen in the space of a day? Do  
22: you have any sense of what sorts of conditions could  
23: lead to that?  
24: MR. SMITH: Assumes facts. Calls for  
25: expert opinion.

**(continued page 00224)**

01: THE WITNESS: Yeah. Vacuum failure could  
02: be a contributing factor to that. It also  
03: depends, again, right, the -- the approximate  
04: starting volume or starting level both  
05: correlated to size of the tank, so it's --  
06: We always try and -- Or one metric of  
07: performance for the freezers is liquid nitrogen  
08: usage in liters per day or liters per time, so  
09: those are the numbers that we would be closest  
10: to, and we can use --  
11: You know, you could manually measure with  
12: measuring sticks to get inches lost per day and  
13: then convert that to liters to get an  
14: approximation.  
15: But the vacuum failure would be a  
16: contributing factor; but, also, usage and how  
17: many racks you've added, those sorts of things  
18: would all affect that.

19: Q. (By Ms. Cowan) Do you know the average  
20: evaporation rate for an -- an 808 series tank?  
21: A. I wouldn't call -- wouldn't recall  
22: precisely. I -- I want to say they range -- All the  
23: MV freezers, the steel lines range from --  
24: MR. SMITH: So the question is: Do you

25: know the average evaporation rate for an 808

**(continued page 00225)**

01: series tank?

02: THE WITNESS: No. No. Yeah. There's --

03: there's a -- slightly different usage rates

04: between high efficiency and open tops, depending

05: on the model.

06: Q. (By Ms. Cowan) Yeah. That's fine. You

07: started to answer something, and then your -- well,

08: then Mr. Smith --

09: A. Yeah. I was going to --

10: Q. -- interrupted you.

11: A. I was going to give a -- a range of all

12: different -- different MV models --

13: Q. Please do.

14: A. -- to my recollection, but I realize it

15: doesn't answer the 808 question.

16: Q. No. I'd -- I'd love to know what the

17: range you were going to provide was.

18: A. And this may be -- may be incorrect. My

19: recollection is somewhere between 5 to 10 liters per

20: day. Again, depending on the model, the size, and

21: the usage all impact that.

22: Q. Okay. So 5 to 10 liters. And do you know

23: how many inches that would translate to in an 808?

24: A. I don't know offhand. I'd need that

25: conversion table.